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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/618,579	07/18/2000	SERGEY A. SELIFONOV	02-028950US	8517

22434 7590 01/29/2003

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EXAMINER

ZHOU, SHUBO

ART UNIT	PAPER NUMBER
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1631

DATE MAILED: 01/29/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/618,579	SELIFONOV ET AL.	
	Examiner	Art Unit	
	Shubo "Joe" Zhou	1631	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 October 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 93-98 and 133-156 is/are pending in the application.
- 4a) Of the above claim(s) 93-98, 133-138 and 148-156 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 139-147 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                     | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>19, 104, 27, 29</u> | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

Applicants' election, with traverse, of Group II (claims 139-147) in the CPA, drawn to a method of identifying a set of oligonucleotides for use in an *in vitro* recombination procedure, in Paper No. 28, filed 10/25/02, is acknowledged. The traversal is on the ground(s) that Group II and III should be examined together because there would be no undue search burden to the Office. This is not found persuasive because as set forth in the previous Office action, the inventions of Group II and Group III are distinct and classified in a totally different class and has distinct usage. The methods of making nucleic acids and a computer system have certainly acquired a separate status in the art as a separate subject for inventive effect and are usually published separately. The search for each of the above inventions is not co-extensive. See page 3. To include Group III for consideration, clearly more classes/subclasses and different search strategies would have to be searched, which would cause undue search burden to the office. Thus, the requirement is still deemed proper and is therefore made FINAL.

Claims 93-98, and 133-156 are currently pending, but only claims 139-147 are under consideration in the present action, and claims 93-98, 133-138, and 148-156 are withdrawn from further consideration as being drawn to non-elected inventions.

### *Claim Rejections-35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 139-147 are rejected under 35 U.S.C. 103(a) as being unpatentable over**  
**<sup>IDS document:</sup>**  
**Dahiyat et al. (US Patent No. 6,403,312).**

Claims 139-147 are drawn to a computational method of identifying a set of oligonucleotides for use in an in vitro recombination procedure.

Dahiyat et al. disclose a method of protein design automatic for protein libraries. As an example, Dahiyat et al. teach of a procedure for making and computationally screening an array of mutant polypeptides of  $\beta$ -lactamase TEM-1. See columns 30-34. The procedure comprises providing data for the sequence of TEM-1 and computationally identifying positions of the sequence that are to be allowed to change their identities (column 30). The procedure also comprises computationally prescreening on TEM-1 by using Dead End Elimination optimization method to find the lowest energy, ground state sequences (column 31). The multiple peptide sequences are generated by taking consideration of the stability of the conformation of the polypeptide and the stability of the conformation of the enzyme's active site. Also see column 7. To synthesize the recombinant peptide sequences, a set of overlapping oligonucleotides including all desired mutations are identified and synthesized to be used to generate a mutant sequence library. See column 32. The method also comprises additional genetic operations such as PCR multiplication using the identified oligonucleotides, which would introduce mutations at the various positions selected.

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While Dahiyat et al. do not explicitly recite the term "crossover" as required in the instant claims, and do not explicitly indicate this procedure is for generating recombinant sequences, the fact that particular sites are selected and allowed to change to other amino acid residues in order to generate mutant proteins would have made it obvious to an ordinary person in the art that those sites would have been served as crossover sites, the wild type sequence and those with other amino acid residues at one particular position selected would have been parental sequences, and the resulted mutant sequences which would have different amino acid residues at all those positions selected would have been recombinants.

### *Conclusion*

No claim is allowed.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CFR § 1.6(d)). The CM1 Fax Center number is either (703) 308-4242 or (703)305-3014.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to:

Shubo "Joe" Zhou, Ph.D., whose telephone number is (703) 605-1158. The examiner can normally be reached on Monday-Friday from 8 A.M. to 4 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, Ph.D., can be reached on (703) 308-4028.

Any inquiry of a general nature or relating to the status of this application should be directed to Patent Analyst Tina Plunkett whose telephone number is (703)-305-3524, or to the Technical Center receptionist whose telephone number is (703) 308-0196.

S. "Joe" Zhou, Ph.D.



MICHAEL P. WOODWARD  
SUPERVISORY PATENT EXAMINER  
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